THE ORIGINAL
Stump Machine
www.stumpmachine.com

PRX90 & PRX130
OPERATIONS & OWNERS MANUAL

US PRAXIS

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Congratulations:

Thank you for purchasing a Praxis stump grinder. Through your confidence in us, you have chosen an exceptionally high quality product.

This manual is a valuable document. It describes your new Praxis machine. Read the manual carefully before attempting to use the machine. Following the instructions (use, service, maintenance, etc.) can considerably increase the life-span of your machine and even increase its resale value. Please contact your dealer for more information.

If you sell your Praxis machine, make sure to give the operator's manual to the new owner.

Use:

The Stump Machine is used to remove tree stumps. By moving the blade in sweeping movements laterally over the top and front of the stump, you can gradually grind it away. Read the chapter "Safety instructions" before you use the machine for the first time.

Insure your machine:

Contact your insurance company to check on insurance coverage for your new machine. You should have all-inclusive insurance for liability, fire, damage and theft.

Good service:

Praxis products are sold all over the world and only in specialized retail trade with complete service. This ensures that you as a customer receive only the best support and service... Before the machine was delivered it underwent inspection and was adjusted by your dealer. When you need spare parts or support in service questions, guarantee issues, etc., please consult the following professional:

The Operator's Manual belongs to machine with serial number:	Engine number:

Serial number:

The serial number can be found on the printed plate attached to the frame, next to the engine. The plate includes the following information:

- The machines type designation (MODEL).
- The machines serial number (S/N).

Please state the type designation and serial number when ordering spare parts.

The engines serial number is punched in the crankcase under the oil level guard.

The engine type is specified on the crankcase to the right of the oil level guard but also appears on the decal on the starter.

Please state these when ordering spare engine parts.

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SAFETY INSTRUCTIONS

General use:
The object of this manual is to help you use your Praxis machine safely and to give you information about how to maintain your machine. Please read the manual carefully before attempting to use the machine.

Read this manual carefully and make sure you understand it before using the machine or performing any maintenance. It is the responsibility of the machine owner to explain the contents to the user.

If after reading the operator's manual you are still unsure about the safety risks associated with use of the machine, you should not use the machine. Please contact your dealer or manufacturer for more information.

These safety instructions only address the basics for safe use. It would be impossible in the safety instructions to describe all possible risk situations that could arise when using the machine. You can however, prevent accidents by always using common sense.
To obtain extra copies of the operator's manual; please contact your dealer or the manufacturer.

IMPORTANT INFORMATION

Do not use the machine until you have read the operator's manual carefully and understand the instructions given. All maintenance work or adjustments not described in this manual must be performed by an authorized Praxis service provider.

⚠ WARNING

The stump grinder can be dangerous if used improperly or without due care and can lead to serious accidents, in the worst cases even fatal accidents. It is very important that you read this operator's manual and understand the instructions before you attempt to use the machine.

⚠ WARNING

Under no circumstances may the original design of the machine be modified without written approval from the manufacturer. Such modifications not only affect the performance and durability of the machine, but may even pose a safety risk for users and those in the vicinity. Unauthorized modifications to the design of the machine may absolve the manufacturer from liability for any resulting personal injury or property damage. Modifying the machine without written approval from the manufacturer may void the guarantee.

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- Follow all safety instructions. Failure could result in serious injury to yourself or others.
- Accident prevention regulations, other general safety regulations, occupational safety rules and traffic regulations must be followed without fail.
- All users must be trained in use of the machine before they begin operating it. The owner is responsible for training users.
- Engage an authorized Praxis service provider for all service and repairs not described in this manual.
- Praxis original spare parts are designed and specified to maintain high quality and correct fit for optimal durability and life-span. From a safety point of view, you should only use Praxis replacement parts.
- Learn how to use the machine and its controls safely and learn to recognize the safety decals and their meaning.
- Only use the machine for removing tree stumps and exposed root systems. It is not intended for any other use.
- Check that the machine is in serviceable condition prior to use; see the chapter "Maintenance and Trouble Shooting".
- Only use the machine in daylight or in other well - lit conditions. Keep the machine a safe distance from holes or other irregularities in the ground. Pay attention to other possible risks.
- Only allow the machine to be used by adults who by adults who are familiar with its use.
- Never allow children or persons no trained in the use of the machine to use or service it. Local laws may regulate the age of the user.
- People and animals can distract you causing you to lose control of the machine. For this reason, you should always concentrate and focus on the task at hand.
- Never leave the machine unsupervised with the engine running.
- Make sure that other people are nearby when you are using the machine so that you can call for help should an emergency arise.
- The machine is tested and approved only with the equipment originally provided or recommended by the manufacturer.

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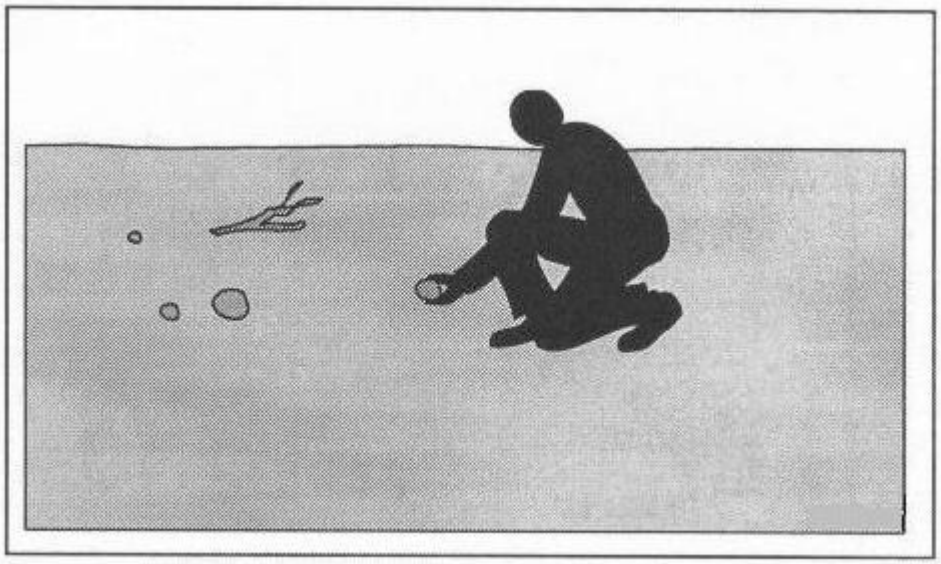
The engine can become very hot. To avoid being burned, you must turn off the engine and wait until all parts have cooled before touching the engine.

Overexposure to vibration may lead to circulatory or nerve damage, particularly in people who have impaired circulation. Contact your doctor if you experience symptoms that could have been caused by overexposure to vibration. Examples of common symptoms include numbness, pain, muscle weakness, change of skin color or an uncomfortable feeling of tingling. These symptoms appear most frequently in the fingers, hands or wrists.

IMPORTANT INFORMATION
Never use a stump grinder that is damaged or incorrectly adjusted. Never use the stump grinder if any component is missing or if it is not properly assembled. Check that the cutting tools stop rotating when you reduce the throttle. If you find yourself in a situation where you are not sure what to do, always seek expert assistance. DO NOT try to attack any problem you are not qualified to resolve.



Clear the work area before beginning work.

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Preparations:

- Make sure that you always have first aid equipment at hand when using the machine.
- Make sure nobody else is in the vicinity of the machine when you start the engine, engage the drive or run the machine.
- Make sure animals and people maintain a safe distance from the machine.
- Clear the area of objects such as stones, toys, steel wire, etc. that could become caught in moving machine parts and thrown out.
- Find and locate all fixed objects in the ground, such as sprinkler systems, poles, water valves, bases for washing lines, etc. Be certain to check for hidden electrical cables or similar in the surface of the lawn. Always run the machine around these objects. Never intentionally run the machine over foreign objects.
- Check the dead man's grip and all guards are fitted and functioning. **DO NOT** use the machine if it is not working properly.
- Make sure no clothing, long hair or jewelry can catch in moving machine parts.
- Check that all safety decals are in place. See the chapter "Location of decals".
- Use mouth protection, protective gloves with good grip and protective clothing which you can move unrestricted. Also use leg protection to protect your legs from sparks and the cutting tools.
- Never use the machine when barefoot. Always wear protective shoes or protective boots with anti-slip and preferably with steel toes.
- Use a helmet with a full face visor or a mesh visor and protective glasses. Wear approved ear-protection when running the machine. Ask tour dealer about approved protective glasses, ear protection and recommended helmets.

Always use approved protective clothing and approved protective equipment when using the machine. Protective clothing and protective equipment cannot eliminate the risk of accidents, but wearing proper clothing and the correct equipment will reduce the degree of injury should an accident occur. Ask your dealer about approved protective clothing and approved protective equipment recommended by Praxis.

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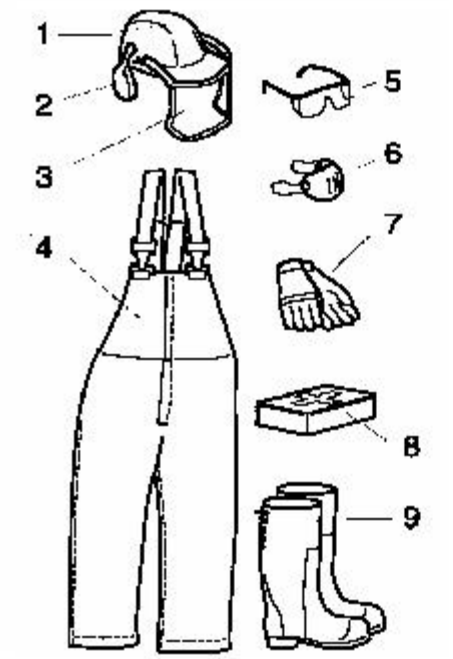
Protective equipment:
Consult your dealer when selecting protective equipment. Our dealers have a broad assortment of equipment for professionals such as forestry workers and knowledge about occupational environment requirements and protective levels.

Before using the stump grinder, you may in many cases need to cut back to object with a power saw. Hence, it is appropriate to use personal protective equipment that fulfils requirements for working with both stump grinders and power saws.

The main difference is that you should wear protective glasses when operating the stump grinder while the wire mesh visor gives sufficient protection when using a power saw. Thus when using the stump grinder, we recommend using both a wire mesh or visor to protect your face and protective glasses. Alternatively, you can use a Plexiglas face guard, but it scratches more easily and is more susceptible to soiling and fogging.



You require the following personal protective equipment:

1. Protective helmet (hard hat)
2. Ear protection
3. Face guard
4. Protective trousers
5. Protective glasses
6. Breathing protection (risk of dusty work environment)
7. Protective gloves
8. First aid kit
9. Protective boots or steel-toed shoes.

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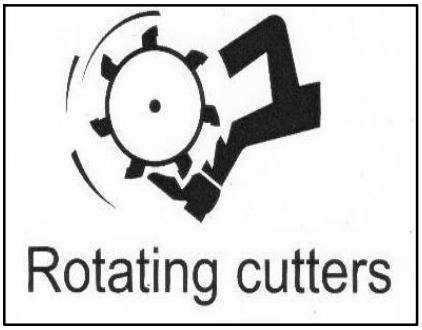
Operating:



- **DO NOT** use the machine on grades of more than 10 degrees.
- **DO NOT** use the machine if you are tired, if you have consumed alcohol, or if you are taking other drugs or medication that can affect your vision, judgment or coordination.
- Never use the machine indoors or in spaces lacking proper ventilation.
- Make sure you have a proper foothold when using the machine, particularly when backing. Walk, don't run. Never work on wet grass. Poor traction may cause you to slip.
- Keep your hands and feet away from moving parts.
- Keep your hands and feet away from the work tools.
- **DO NOT** use your feet or other parts of your body parts of your body to gain greater bearing pressure against the stump.
- Smoking, open flames or sparks in the vicinity of the machine are **strictly** forbidden. Gasoline is extremely flammable and carelessness in handling can result in personal injury or fire.
- Never use a machine with a deflective muffler.
- In very warm and dry climates, stump grinder operation poses a risk of forest fires.
- Stop and inspect the equipment if you run over or into anything. If necessary, make repairs before beginning again.

- Whatever happens, you should always park the machine on even ground, disengage the drive, activate the parking, turn off the engine and wait until all moving parts have stopped before leaving the operating position behind the machine.
- Serious accidents can occur if you fail to be on guard for children in the vicinity of the machine. Never assume that children will stay put where you last saw them.

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- Keep children away from the machine.
- Keep children away from the work area and under close supervision by another adult.
- Never allow children to operate the machine.
- Be particularly careful near corners, bushes trees or other objects that block your view.

Movement/Transport:

- To turn and steer the machine, press down on the handle and turn on the back wheels.
- Turn off the engine and allow it to cool at least 2 minutes before transport.
- Be careful and use safe lifting and moving techniques when loading/unloading the machine.
- We recommend having two people to lift the machine.
- Activate the parking brake during transport.
- Fasten the machine properly in place with approved fasteners, such as tension belts, chains or rope. Always check that you are in compliance with applicable traffic regulations before transporting the machine.

Storage:

- Allow the engine to cool before storing the machine. Never store the machine near an open flame.
- Store the machine with the fuel valve closed.
- Store the machine and fuel in such a way that there is no risk that leaking fuel or fumes can come in contact with flames or sparks from electrical machines, electric engines, relays, switches, boilers or similar.
- Store the machine in a locked space away from children and adults untrained in use of the machine.

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- Never store or operate the machine near an open flame.

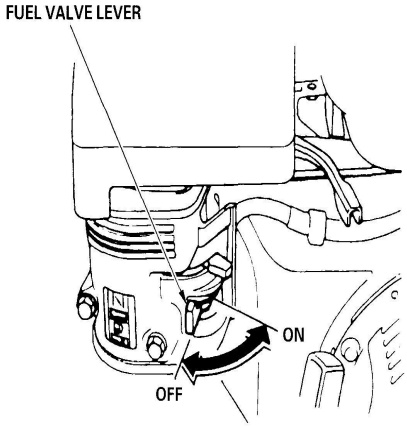
SAFETY INSTRUCTIONS
- Continued -

⚠ WARNING

Gasoline and gasoline fumes are poisonous and extremely flammable. Be especially careful when handling gasoline, as carelessness can result in personal injury or fire.

Fuel System:

- Only store fuel in containers approved for that purpose.
- Never remove the fuel cap and fill the fuel tank when the engine is running.
- Always stop the engine when refueling.
- Do not smoke when filling the gasoline tank and do not pour gasoline in the vicinity of sparks or open flame.
- Never fill the fuel tank indoors.
- Before starting the machine after refueling, it should be moved at least 10 feet (3 M) from the location where it was filled.
- Turn off the fuel supply for storage or transport.
- If leaks arise in the fuel system, the engine must not be started until the problem has been resolved.
- Check the fuel level before each use and leave space for the fuel to expand, because the heat from the engine and the sun can otherwise cause the fuel to expand and overflow.
- Avoid overfilling. If you spill gasoline on the machine, wipe up the spill and wait until it has evaporated before starting the engine. If you spill gasoline on your clothing, change your clothing.
- Close the fuel valve.



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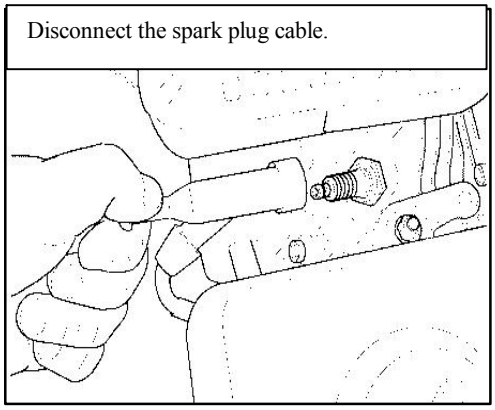
Maintenance:



- Never make adjustments with the engine running.
- Disengage the drive units, shut off the engine and wait until all moving parts come to a complete stop before making adjustments, performing maintenance or cleaning the machine.
- Disconnect the spark plug cable before beginning repair work.
- Keep all components in serviceable condition and make sure all nuts, bolts, etc. are tight.
  Replace worn or damaged decals.
- Be careful when checking work tools. Use gloves when performing maintenance work.
- Never allow persons not trained in the use of the machine to perform service on it.
- Always park the machine on even ground before performing maintenance or making adjustments.
- Do not disassemble the engine. This can invalidate your engine warranty. Contact your dealer if you have any questions regarding service or guarantee matters. Follow all maintenance instructions.
- Do not change the setting of governors and avoid running the engine with overly high RPM. If you run the engine too fast, you risk damaging the machine components.
- Do not modify safety equipment. Check regularly to be sure it works properly. The machine must not be run with defective of disassembled safety equipment.
- The muffler is designed to maintain sound levels at an approved level and keep direct exhaust away from the user. Exhaust gases from the engine are extremely hot and may contain sparks that can cause fires or burn the user.
- Never use a machine with a defective muffler.
- Reduce the risk of fire by removing grass, leaves and other debris that may have caught in the machine.

⚠ WARNING

Wait until all moving parts are completely still before performing maintenance on the machine. Turn off the engine and remove the spark plug cable.

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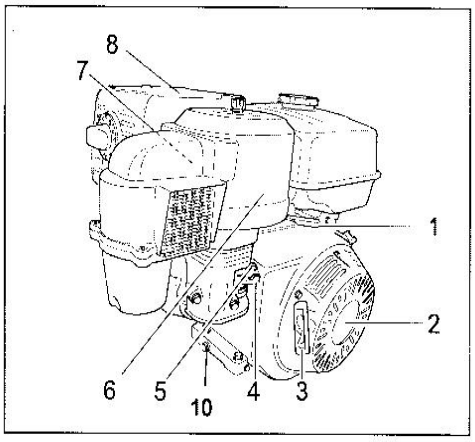
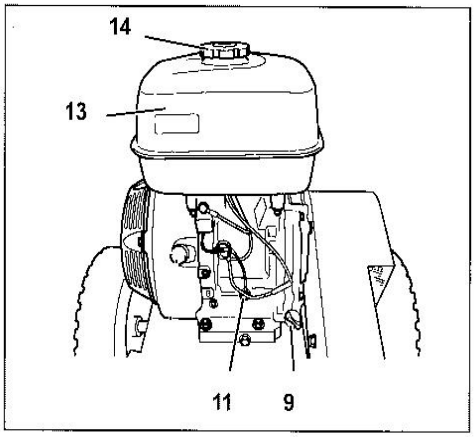
CONTROLS

Engine:

Exterior engine components and controls.

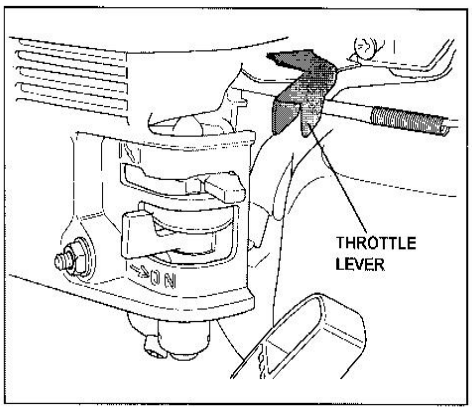
1. Throttle
2. Starter
3. Starter handle
4. Fuel valve
5. Choke control
6. Air filter
7. Spark Plug
8. Muffler
9. Oil dipstick
10. Oil drainage
11. Oil level guard
13. Fuel tank
14. Fuel filler cap





Throttle:

The lever on the engine is normally not used. It is connected to the throttle on the handle. If the cable should bind or break, you can reduce the throttle with the lever on the engine as an emergency measure to slow the engine speed to an idle and stop the cutting wheel.



Starter:

The starter is of the magnapull type with spring return. To replace the return spring or starter cord, contact an authorized service workshop.

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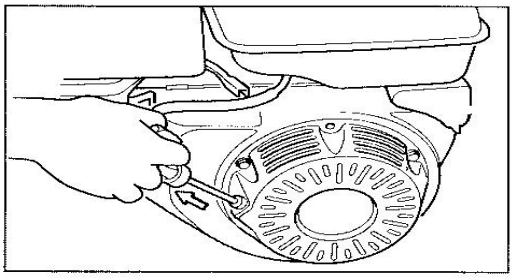
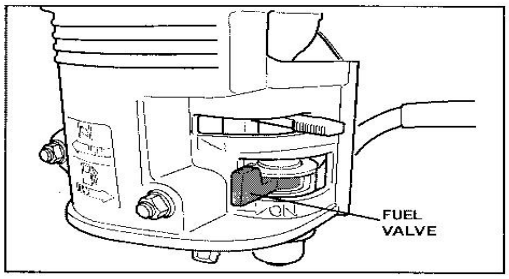
Starter handle:

Misuse of the starter handle can damage the starter. Do not twist the starter cord around your hand.



Pull out the handle slowly until the gears mesh. Do not pull out the starter cord completely and do not let go of the starter handle when extended.

Fuel valve:



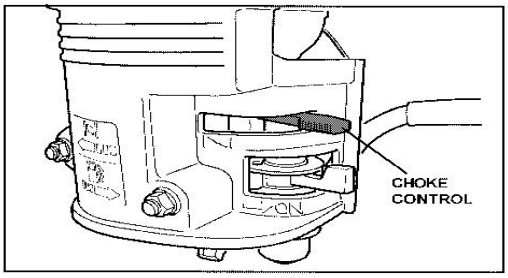
The fuel valve opens and closes the connection between the tank and the carburetor.

The illustration shows the tank valve closed; to open, turn the lever completely to the right. There is no middle position.

Turn off the valve when the machine is not in use to avoid flooding the carburetor.

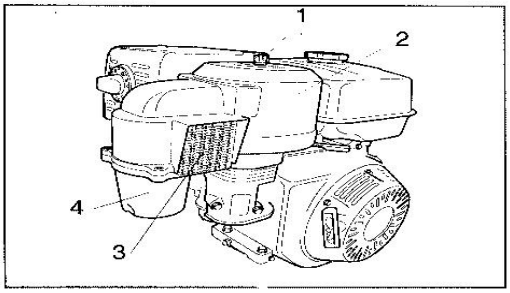
The fuel valve is combined with a sludge reservoir.

Choke control:



The choke control opens and closes the choke valve in the carburetor. This is only used to start a cold engine.

The image shows the choke valve open; to close, move the lever to the left. The midway positions can be used. When the engine starts, the lever can be moved gradually to the right as long as it continues to run smoothly. Forgetting the choke is evident as the engine runs roughly and produces black smoke.



This also results in increased fuel consumption.

Air filter:

The engine air filter consists of a cyclone filter and a fine filter.

Air is drawn in through the screen (3) on the cyclone filter and coarser pollutants collect in the container (4).

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Air filter (Continued):

The fine filter, which consists of a cyclone filter and a fine filter.

Air is drawn in through the screen (3) on the cyclone filter and coarser pollutants collect in the container (4).

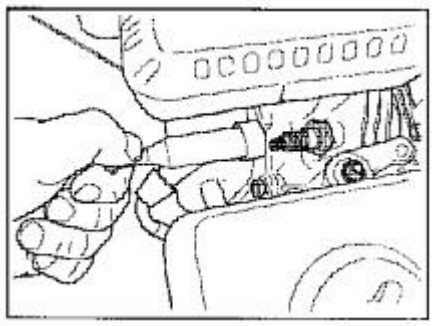
The fine filter, which consists of a foam rubber pre-filter and a paper filter cartridge, is located under the cowling(2). The cowling and the cyclone filter can be removed by removing the wing nut (1).

See the chapter "Maintenance/Cleaning the cyclone filter and Replacing the air filter" for cleaning instructions.

Running the machine with a dirty air filter will cause the engine to run on partial choke and show the same symptoms as a forgotten choke described above. It can also be difficult to start.

Spark Plug:

The engine spark plug is hidden under the ignition cable shoe. When performing service, it is important that the engine cannot start accidentally. For this reason, always remove the ignition cable shoe from the spark plug. To avoid pulling the cable, the cable shoe is equipped with a special handle; see the illustration.



Type of spark plug, see "Technical data".

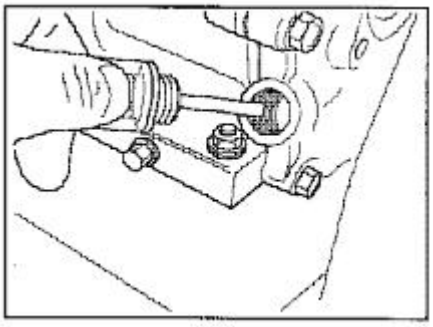
Service instructions see"Maintenance/Electrical system".

Muffler:

The engine muffler is equipped with a heat protective cowling. Nonetheless, it still becomes hot when the engine is running. Avoid touching the muffler when it is warm. Risk for burns.

Oil dipstick:

The dipstick for the crankcase oil reservoir is located on the front of the engine. Refill the engine oil in the hole where the dipstick fits.



When checking the oil level, the dipstick should **not** be screwed in. The machine should be parked on even ground with the engine stopped. Never run the engine without the dipstick in place. The engine has an electronic oil level guard. It stops and cannot be started if the level becomes too low. Yet you should not rely entirely on the level guard; rather you should check the oil using the dipstick.

For normal use, we recommend SAE 10W-30 weight engine oil service SF-SG; see also the chapter "Lubrication/Engine oil".

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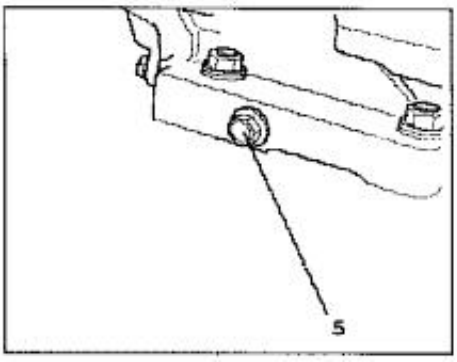
Oil drainage:

The drainage screw (5) for the crankcase oil reservoir is located on the back of the engine.



IMPORTANT INFORMATION
Used engine oil is a health hazard and legislation prohibits disposal on the ground or in nature; it should always be disposed of at a workshop or appropriate disposal location. Avoid skin contact; wash with soap and water in case of spills.

Fuel tank:
Underneath the tank, there is a fuel filter combined with a fuel valve. The tank volume is 1.72 Gal. (6.5 liters)

Fueling:

Read the safety instructions before fueling.
Keep the fuel and fuel tank clean. Avoid filling the machine with dirty fuel. Make sure the fuel cap is properly tightened and the gasket is not damaged, particularly before washing the machine.
Use unleaded gasoline with minimum 86 octane rating. Never use gasoline mixed with two-cycle oil. For ethanol and methanol fuel, the following applies:
Maximum allowable ethanol 10% (volume).
Maximum allowable methanol 5% (volume).
Maximum allowable MTBE (Methyl Tertiary Butyl Ether) 15% (volume).
If the engine "bolts" at normal load it can be damaged. Change the fuel. If this does not help, contact an authorized service workshop.
Do not fill the tank completely; leave space for the fuel to expand as it warms up.

⚠WARNING
Gasoline Is highly flammable. Observe caution and fill the tank outdoors. (See the safety instructions.

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Centrifugal clutch:
The engine is equipped with a centrifugal clutch that is connected to the crankshaft. When the engine speed increases, the drive for cutting wheel engages automatically. The centrifugal clutch is maintenance-free; it is not possible for the user to make adjustments.

Throttle:
The lever controls engine speed.
With the lever down, the engine runs at idle and functions as start position.
When the engine speed increases, the centrifugal clutch drive automatically engages the cutting wheel.

Brake:
The lever activates a disk brake on the left wheel when it is pulled backwards. The brake should always be activated when operating the grinder, when it is parked and when it is being transported.

⚠ WARNING
NEVER operate a machine with a defective brake.

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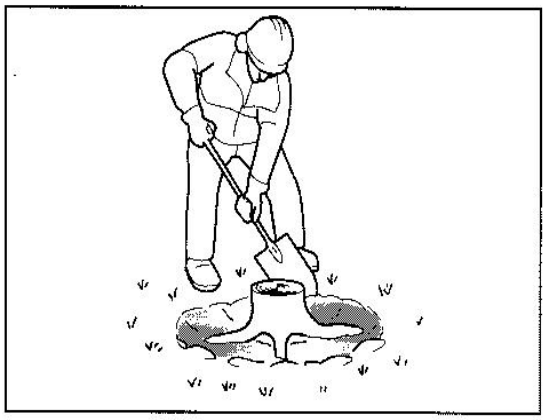
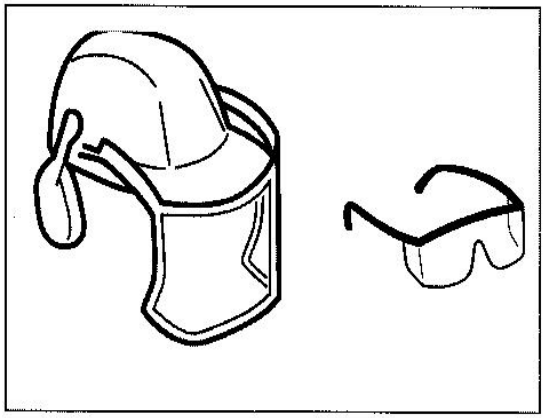
Before you start:
Dig away the earth and remove any stones near the tree stump that may interfere with your work. Check that the ground is free of foreign objects, such as electrical cables, barbed wire, etc.



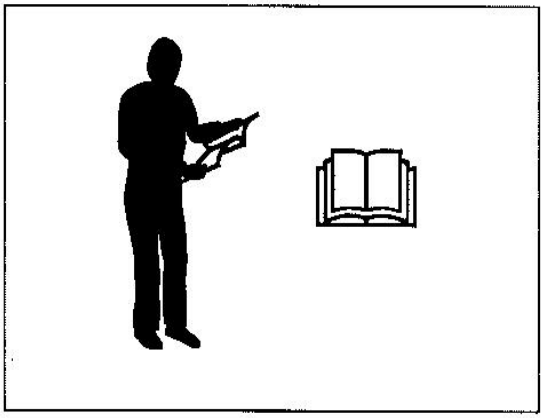
Cut or trim the stump as necessary using a power saw.

Review all the machine's safety decals.



Use a hard-hat, ear and eye protection. A mesh visor alone does not provide sufficient eye protection; supplement with protective glasses.

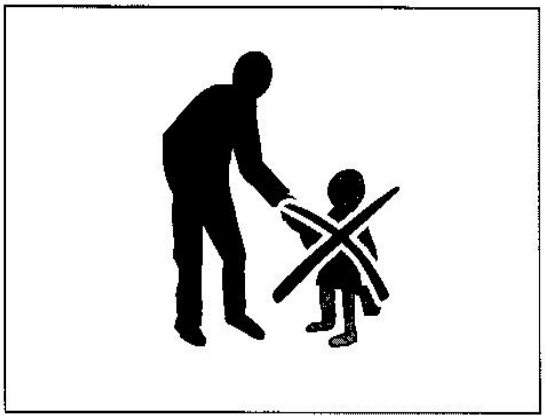
Make sure that you are familiar with safety regulations and shutdown procedures described previously in the operator's manual.



Make sure that all guards are in place and in good condition.

Make sure that the blades and cutters are in place and in good condition.

Make sure that the work area and cutter in particular and free from metallic objects such as wire, nails, etc. that could be thrown out and injure persons in the vicinity and damage the equipment.



Make sure that everyone, including children and animals, maintain a distance of at least 50 feet (15 m) from the machine. Debris can be thrown out and injure people and animals.

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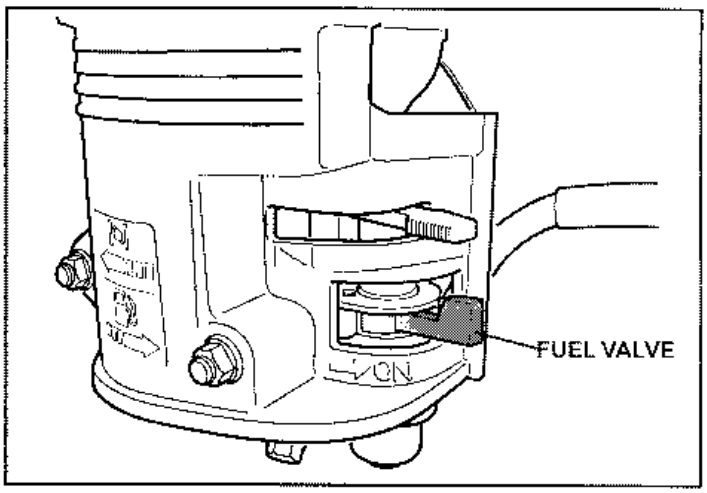
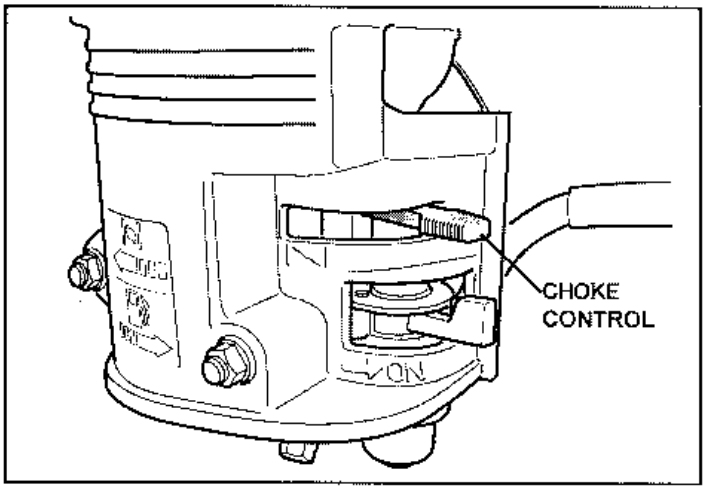
Starting the engine:
Check that all daily maintenance as described in the maintenance schedule has been performed.
Check that there is sufficient fuel in the tank.

Fuel valve:
Open the fuel valve. Place the lever all the way to the right.



Choke control:
When starting the engine warm, the lever should be in the right position; see the illustration.
When starting the engine cold or partially warm, place the lever completely or partly to the left.
Move the lever back to the right once the engine starts. When the engine is cold, it may be best to move the lever back in several stages. Find the position where the engine runs smoothly.



Throttle
Set the throttle on the handle to the SLOW (START)/DISENGAGE position.

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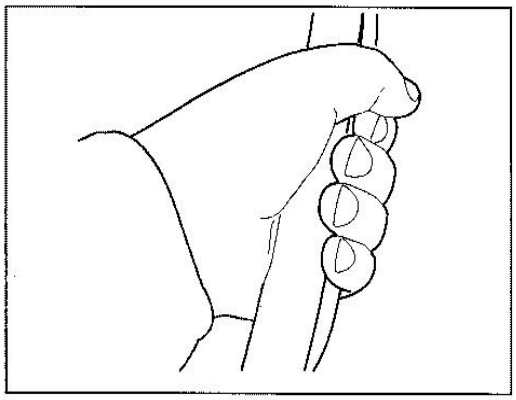
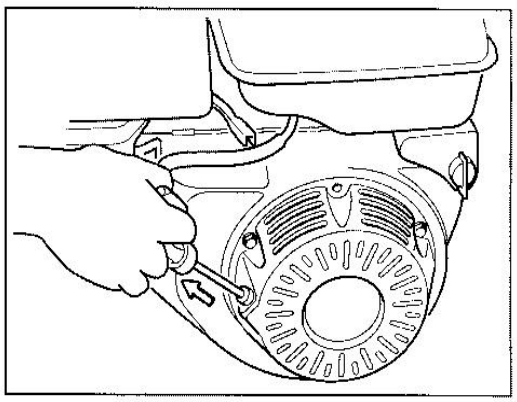
Safety presence grip bar
Hold in the safety presence grip bar against the handle.



Starter handle:
The dead man's grip must be pressed in when starting the engine.

Misuse of the starter handle can damage the starter.
DO NOT twist the starter cord around your hand,
Pull out the handle slowly until the gears mesh. Then give a sharp pull on the starter handle.
DO NOT pull out the starter cord completely and
DO NOT let go of the starter handle when extended.



Throttle
Keep the throttle at idle. When the throttle is increased, the cutting wheel will begin rotating.

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1. Place stump machine into position with cutting blade near the front-top edge of stump.
2. Set brake to lock position.
3. Set throttle to (START) DISENGAGE position.
4. Start engine.
5. Allow engine to warm up at idle for two minutes.

6. Move throttle up to the ENGAGE position (this will engage the cutting blade rotation).
7. Swing the cutting blade to one side, then lower it approximately 1/2" to 1" into the front-top corner of the stump. Swing the cutting blade back and forth, lowering the cutting blade approximately 1/2" to 1" before each sweep, until you have removed the front portion of the stump to ground level.

8. Raise cutting blade until center of cutting blade is just above top of stump.
9. With the cutting blade off to one side, advance the machine horizontally by releasing and resetting the brake. Advance the machine forward to engage the cutting blade into the stump so that when swept across the stump it will remove 1/2" to 1" of stump with each sweep.
10. Sweep the cutting blade across the stump, cutting away 1/2" to 1" of stump.

11. Advance cutting blade 1/2" to 1", and sweep across stump in opposite direction.
12. Continue sweeping cutting blade left and right across stump, advancing it before each sweep, cutting 1/2" to 1" depth of stump with each sweep.
13. Continue cutting until top level of stump is all removed, making sure not to cut stump deeper than ground level during this first stage.

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14. Turn throttle to the (START)DISENGAGE position, wait ten seconds for blade to stop rotating then release brake and retract machine from stump.

15. Pull machine away from stump, and rake chips away from stump.

16. Place stump machine into position with cutting blade near the front-top edge of the stump.

17. Set brake to lock position.

18. Move throttle up to the ENGAGE position.

19. Complete cutting stump by repeating step 12 again and again until entire stump is cut to desired depth.

20. Stop the machine.

Normal shutdown
Throttle
Set the throttle to SLOW/DISENGAGE.

If the engine has been running full out, let it run easily for about 30 seconds to one minute at low speed.

DO NOT let front of unit touch ground until you are sure cutting wheel has stopped turning.

⚠ WARNING

A rotating cutting blade is very DANGEROUS!

Stay at the operating position and be sure that the blade comes to a complete stop before doing anything else.

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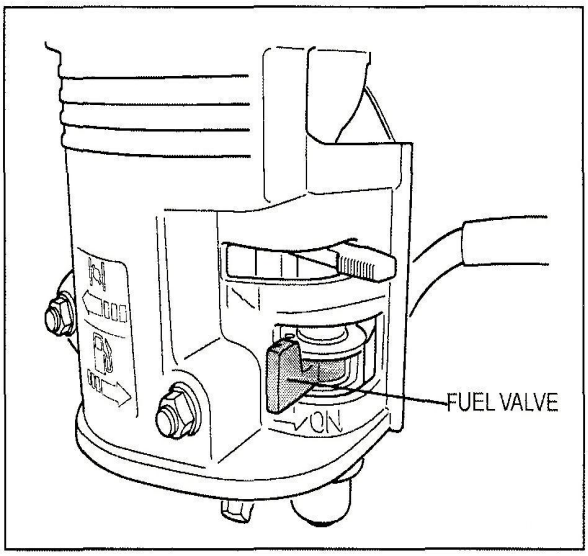
Brake

Activate the brake by pulling the lever.

Fuel valve

Close the fuel valve. Turn the lever all the way to the left (see illustration).



Release the safety presence bar.

Wait until the blade stops.

Make sure that the blade is resting against the ground and has stopped completely before doing anything.

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Maintenance schedule

The following is a list of maintenance procedures that MUST be performed on the machine. For those points not described in this manual, call your dealer or the manufacturer directly.

Maintenance	Daily	-/10	1/25	3/50	6/100	12/300
Check the engine oil level	X					
Change engine oil [1]						
Check the air filter	X					
Clean the air filter [2]				X		
Replace air filter cartridge [2]						X
Clean sludge reservoir for fuel system					X	
Check and clean the spark plug					X	
Replace the spark plug						X
Check engine switch function [3]	X					
Check idle speed						X
Check and adjust play in valves [4]						X
Clean fuel tank [4]						X
Check, replace fuel lines as necessary [4, 5]						X
Check throttle and cable [3]	X					
Check blade and cutter [3]	X					
Check decals and warning signs [3]	X					
Check wear and tension on the belts [3]	X					
Check the chassis, bolts and set screws		X				
Grease the blade bearings (use high temperature grease such as Mobilith SHC 220 or equal)[6]	X					
Grease the wheels (standard lithium base)				X		
Check tire air pressure (25 psi max)	X					

1) First change after 20 hours. 2) In dusty conditions maintenance is required at shorter intervals.
3) Before each use. 4) Performed by authorized service workshop. 5) Performed every second year.
6) Grease every 4 hours.

⚠ WARNING

No service operations may be performed on the engine or unit unless:
The engine is stopped.
The ignition cable has been removed from the spark plug.
The machine is securely parked where it will not tip or begin rolling.

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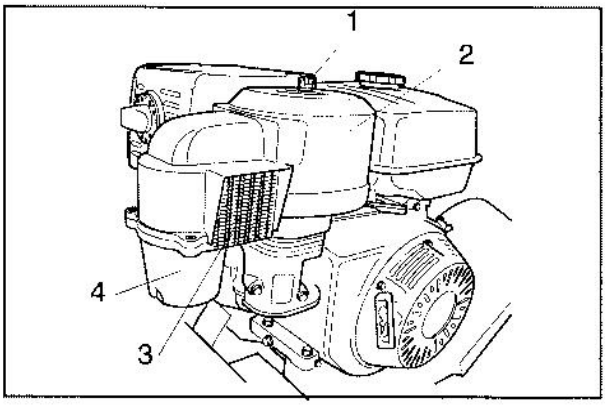
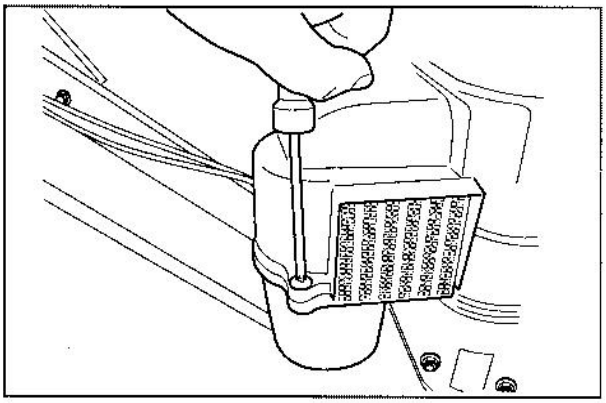
Cleaning the cyclone filter

The cyclone filter collects the largest contaminant particles, which collect in the container. When you can see a layer of dirt at the bottom of the container, the cyclone housing (4), air channels and air intake screen (3) must be cleaned.

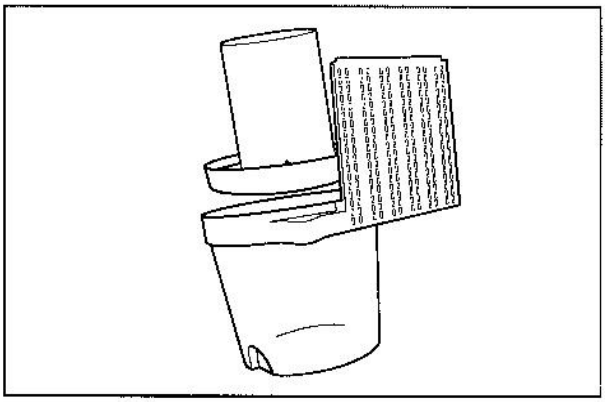


Remove the three screws holding the cyclone housing. Remove the housing with the air intake screen and remove the air channels.

The air channels may remain in the upper portion or follow along with the housing when removed.

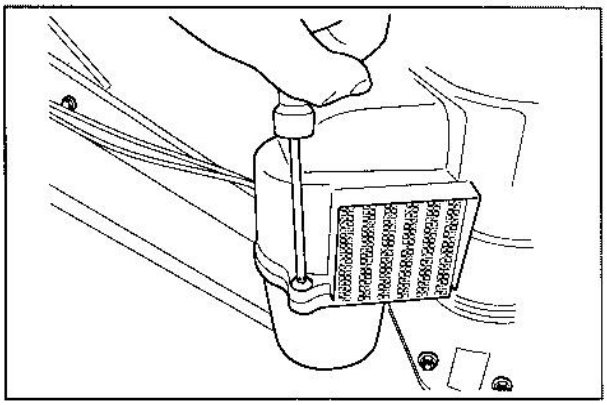


Clean the components. Use water, detergent and a washing-up brush. Dry carefully.



Refit the components. Place the air channels in the cyclone housing. Insert cyclone housing into position and make sure it fits in the upper portion. DO NOT use force; rater coax it into place before fitting the screws.

IMPORTANT INFORMATION
Exercise care when reassembling to avoid damaging anything.
Make sure when mounting that the air intake screen fits exactly in its guide in the upper portion.
Make sure the air channel ends up in the proper position.



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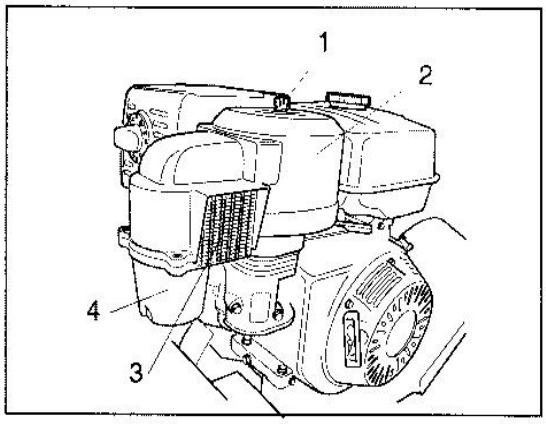
Replacing the air filter

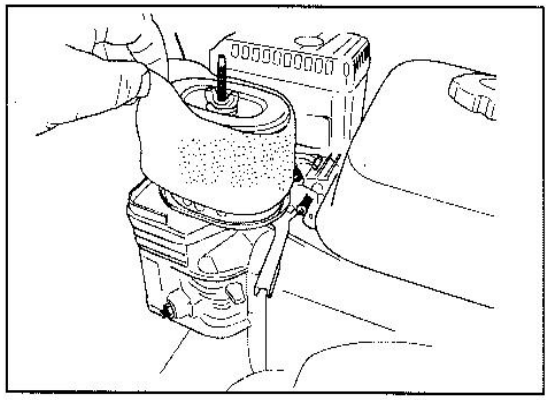
If the engine seems weak, produces black smoke or runs unevenly, the air filter may be clogged. For this reason, it is important to clean and replace the air filter regularly (see the maintenance schedule for the proper service interval).



⚠ WARNING

Allow the exhaust system to cool before performing service. Risk for burns.

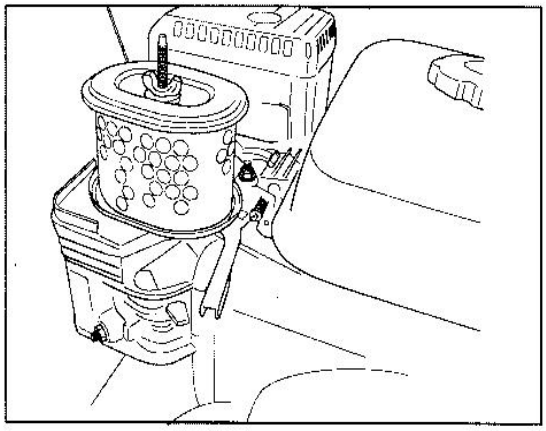
Cleaning/replacement of the air filter is carried out as follows:



1. Undo the wing nut (1) and lift off the cyclone filter with the air filter cowling (2).
2. Remove the foam rubber pre-filter and clean using a mild detergent.

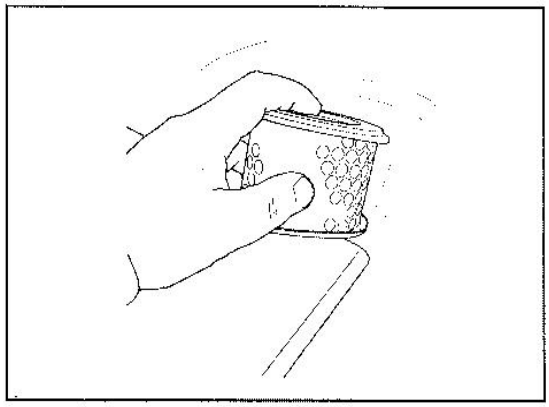
   Squeeze it dry with a clean cloth.

   Soak it with new engine oil. Wind the filter in an absorbent cloth and squeeze out excess oil.



3. Remove the wing nut in the air filter and remove the paper filter. Tap the paper filter against a fixed surface to remove dust. If the paper filter is still dirty or damaged, it MUST be replaced.

IMPORTANT INFORMATION
DO NOT use compressed air over 2 bar/30 PSI to clean the paper filter.
DO NOT wash the paper filter.
DO NOT oil the paper filter.



4. Refit the air filter as follows:

   Mount the paper filter in the air filter housing and tighten the wing nut.

5. Refit the pre-filter on the paper filter.
6. Refit the cyclone filter with the air filter cowling.

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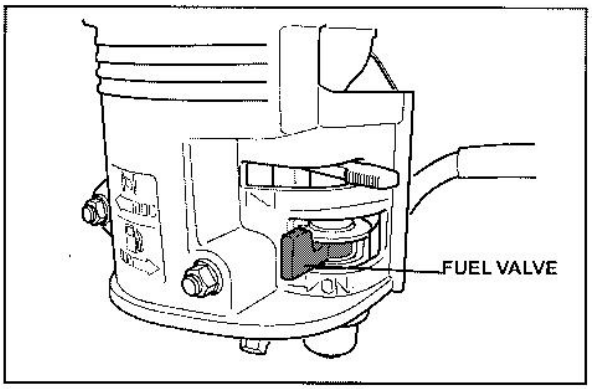
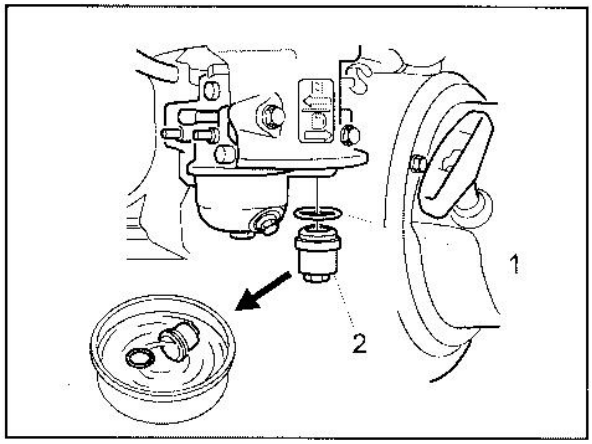
Cleaning the sludge reservoir:



1. Close the fuel valve.
2. Unscrew the sludge reservoir (2). Make sure not to misplace the o-ring (1).
3. Clean the reservoir and the o-wing using a cleaning solvent and dry carefully.
4. Put the o-ring in place in its track and replace the sludge reservoir (2). Make sure not to misplace the o-ring (1).
5. Turn the fuel valve to ON and check for leaks. If it leaks, replace the o-ring.

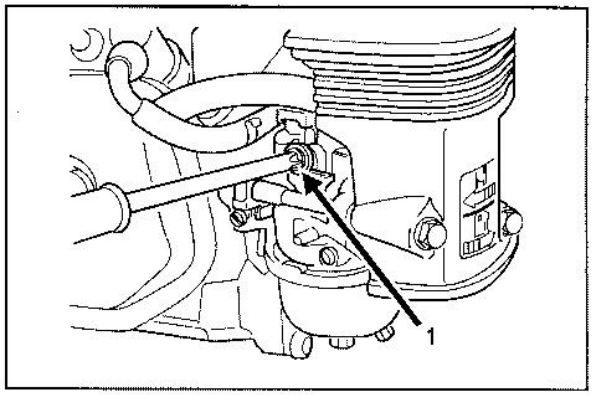


Idle adjustment

⚠ WARNING

Risk for carbon monoxide poisoning. Perform the adjustment outdoors.

1. Start the engine and run it until it reaches normal working temperature.
2. Adjust the throttle to idle position or so that the engine runs at the lowest possible speed.
3. Turn the idle screw (1) so that the engine idles at 1250-1550 RPM.
4. Increase the idle speed with the throttle and move it right back to idle position. Check engine speed again.



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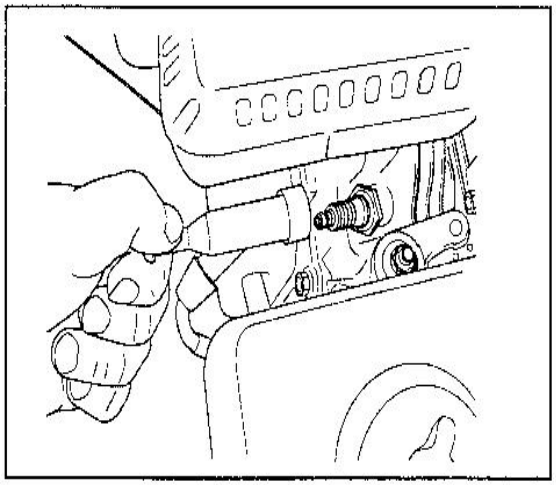
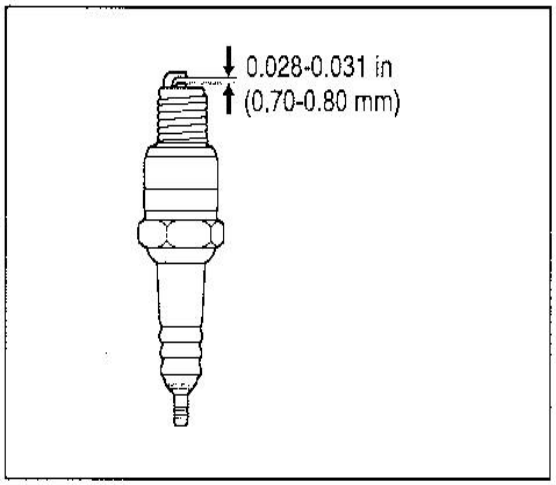
Ignition system:

The engine is equipped with an electronic ignition system. Only the spark plug requires maintenance. For recommended spark plug, see "Technical data".



IMPORTANT INFORMATION
Fitting the wrong spark plug type can damage the engine.

1. Remove the ignition cable shoe and clean around the spark plug.
2. Remove the spark plug with a 3/16" (21mm) spark plug socket wrench.
3. Check the spark plug. Replace the spark plug if the electrodes are burned or if the insulation is cracked or damaged. Clean the spark plug with a steel brush if it is to be reused.
4. Measure the electrode gap with a gapping tool. The gap should be 0.7-0.8 mm/0.028-0.031". Adjust as necessary by bending the side electrode.
5. Reinsert the spark plug, turning by hand to avoid damaging the threads.



IMPORTANT INFORMATION
Inadequately tightened spark plugs can caus overheating and damage the engine. Tightening the spark plug too much can damage the threads in the cylinder head.

6. After the spark plug is seated, tighten it using a spark plug wrench so that the washer is compressed. A used spark plug should be turned 1/8-1/4 of a turn from the seated position. A new spark plug should be turned ½ a turn from the seated position.
7. Replace the ignition cable shoe.

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Cutting blade:
Among the most critical elements of the Stump Machine is the cutting blade. It is also the most subject to damage and wear. In the course of grinding stumps it not only makes contact with the wood, but also encounters numerous assortments of abrasives and objects in the stump's environment, such as dirt, stones, and occasionally a large rock or buried scrap.

The loss of and wear of cutting teeth can significantly impair the efficiency and performance of the Stump Machine. Therefore, it is important to make frequent observations of the condition of all of the cutting teeth and replace or sharpen any damaged or worn blade sections.

NOTICE
Read all the following instructions before beginning to change cutting blade sections.

1. Clean all dirt from the cutting blade and mounting flanges.
2. Remove all bolts holding cutting blade, (Be careful not to let a section drop when they become loose).
3. Check each section for cracks. Replace blade section if it is cracked.
4. When replacing cutting blade sections, make sure blade section is placed in alignment with blade rotation.
5. Refer to page of this Manual for proper blade attachment.

Installing new blades:
Insert blade section between the blade mounting flanges.

Slide bolt through one side of flange, and through flange on other side. Attach lock washer and nut, tighten securely. (Make sure tow bolts are tightened for each blade section).

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Sharpening Cutting Blade Sections:
Do not allow the cutting blade to wear too much before sharpening. The cutting blade sections must be removed from the machine before sharpening.

NOTICE

Sharpening carbide cutting teeth requires a special process.

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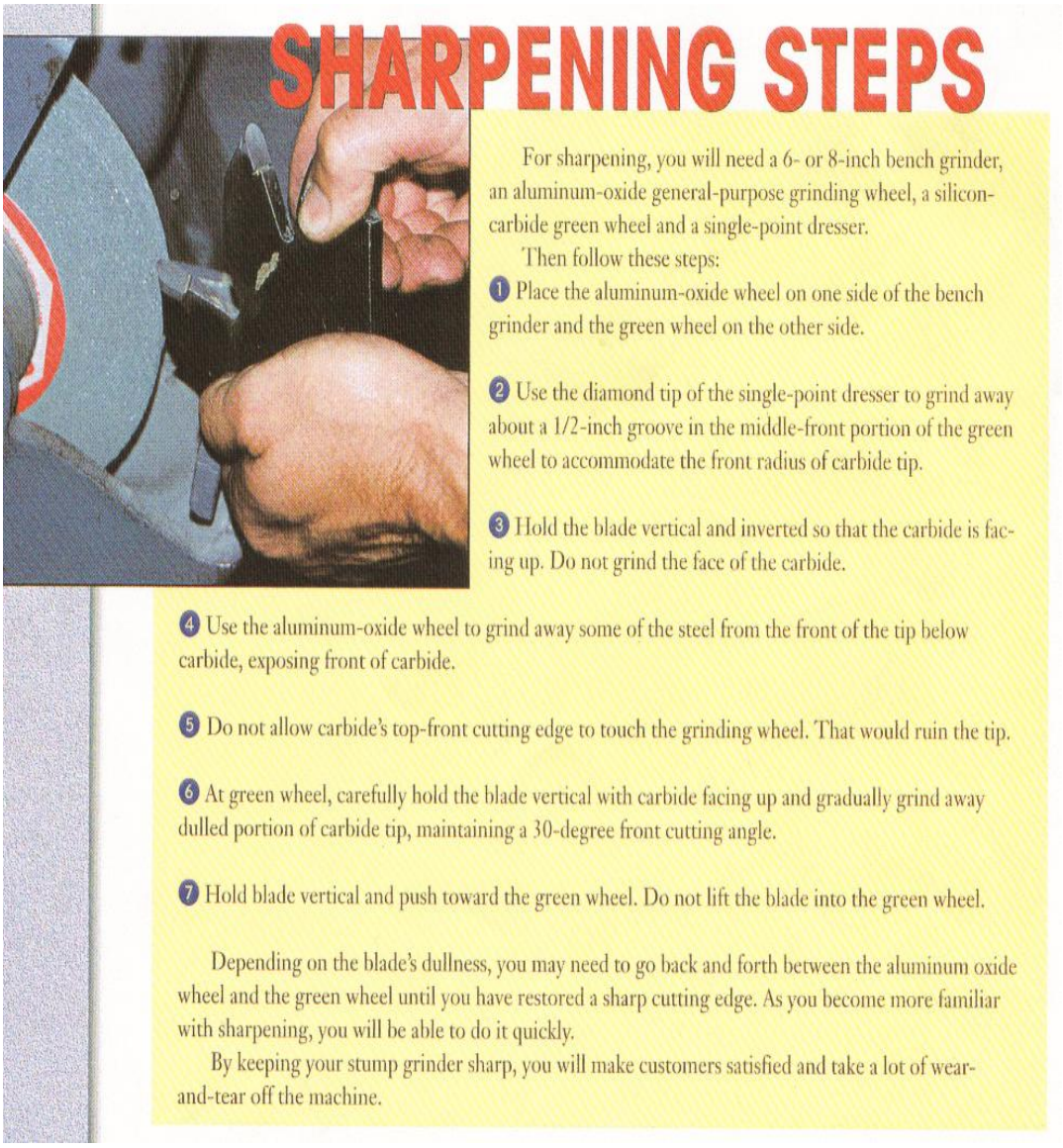
OFFERS A COMPLETE LINE OF SHARPENING ACCESSORIES AND SHARPENING SERVICES
Toll Free: 888-316-8200


SHARPENING STEPS
For sharpening, you will need a 6- or 8-inch bench grinder, an aluminum-oxide general-purpose grinding wheel, a silicon-carbide green wheel and a single-point dresser.
Then follow these steps:
1 Place the aluminum-oxide wheel on one side of the bench grinder and the green wheel on the other side.
2 Use the diamond tip of the single-point dresser to grind away about a 1/2-inch groove in the middle-front portion of the green wheel to accommodate the front radius of carbide tip.
3 Hold the blade vertical and inverted so that the carbide is facing up. Do not grind the face of the carbide.
4 Use the aluminum-oxide wheel to grind away some of the steel from the front of the tip below carbide, exposing front of carbide.
5 Do not allow carbide's top-front cutting edge to touch the grinding wheel. That would ruin the tip.
6 At green wheel, carefully hold the blade vertical with carbide facing up and gradually grind away dulled portion of carbide tip, maintaining a 30-degree front cutting angle.
7 Hold blade vertical and push toward the green wheel. Do not lift the blade into the green wheel.
Depending on the blade's dullness, you may need to go back and forth between the aluminum oxide wheel and the green wheel until you have restored a sharp cutting edge. As you become more familiar with sharpening, you will be able to do it quickly.
By keeping your stump grinder sharp, you will make customers satisfied and take a lot of wear-and-tear off the machine.

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Brake Adjustment

For fine adjustment, loosen set screw on side of brake lever knob. Adjust clockwise to tighten brake; adjust counter clockwise to loosen brake. (Wheel should lock completely, tighten set screw). For coarse adjustment, turn adjusting nuts on brake cable fitting at brake cable mount.

Two minute rule

The machine may be tipped backward or on its side to facilitate access for cleaning or service, but **no longer than 2 minutes.**
If the machine is held in this position for too long, the engine can be damaged by gasoline draining into the crankcase. Should this happen, perform an extra oil change on the engine over a few revolutions with the starter handle before starting the engine again.

Cleaning and washing

Regular cleaning and washing will increase the machine's life span. Make it a habit to clean the machine directly after use, before the dirt sticks.
Check before reusing that the fuel tank lid is properly in place to avoid getting water in the tank.
Use caution when using high-pressure spray because warning decals, instruction signs and the engine can be damaged. **Do not exceed 70 bar/1000 PSI water pressure when cleaning.**
Lubricate the machine after cleaning. This is particularly important if the machine is to be stored.

Lubricating Bearings

Cutting blade bearings should be greased after every 10 hours of operation.
Lubricate two fittings (one on each cutting blade bearing).

NOTICE

Pump grease in slowly and carefully to prevent damage to the bearing seals. Use extreme caution when using a high pressure or high volume grease gun.

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Drive Belts:
The drive system of the stump machine is composed of a 3V banded V-belt. The stump machine's V-belt tension should be checked daily.

Before beginning to check or adjust belt: shutdown the machine, be sure that all moving parts have come to a complete stop. Extreme caution must be used to avoid death or serious injury. Stay clear of belts, pulley, clutch and cutting blade when they are moving.

NOTICE
To extend belt life, proper tension must be maintained. A loose belt will cause excessive cutting blade slippage and belt failure. A belt that is too tight can cause bearing, shaft and belt failure.

To adjust belt tension, loosen the 2 bolts behind clutch. Also loosen the 4 engine mounting bolts. Turn square head adjusting bolt on frame clockwise to tighten belt, counter clockwise to loosen belt. **(Make sure to tighten all 6 bolts after proper belt adjustment is achieved).**
To check belt tension, you should be able to depress the belt down about 1/4 - 3/8" (6-10mm) from the original position.

TROUBLE SHOOTING

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Symptom	Cause	Action
The engine won't start - User error	Fuel valve closed. Choke valve open. Engine switch in OFF position.	Open the fuel valve. Close the choke with cold engine. Turn engine switch to ON.
- Fuel system	Fuel tank empty. Machine stored without observing proper procedure from chapter "Storage/Winter storage". Contamination, water or ice in fuel system. Carburetor problems.	Fill with fuel. Clean tank, sludge reservoir and empty carburetor. Fill the tank with fresh fuel. Clean tank, sludge reservoir, fuel lines and carburetor Fill the tank with fresh fuel.
- Spark plug	Wrong spark plug type. Buildup on electrodes. Short circuit. Gasoline or oil on the spark plug.	Replace the spark plug. Check electrode gap and clean or replace spark plug. Clean the spark plug. Air the engine out. Start with full throttle.
- No spark after checking spark plug	Faulty engine switch, cable or ignition.	Contact authorized service workshop.
- Low compression	Serious interior engine damage or faulty valves.	Contact an authorized service workshop.

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Symptom	Cause	Action
Engine is gutless or runs unevenly		
- Air filter	Clogged air filter.	Clean or replace the air filter.
- Fuel system	Machine stored without observing proper procedure from chapter "Storage/Winter storage".	Clean tank, sludge reservoir and empty carburetor. Fill the tank with proper fuel.
		Fill the tank with proper fuel.
- (Blue exhaust) (Voluminous blue-white exhaust)	Tank filled with 2-cycle mixed oil. Tank filled with diesel.	Clean tank, sludge reservoir and empty carburetor. Fill the tank with proper fuel.
		Open choke valve. Clean or replace the air filter.
- (Black exhaust)	Choke left on. Clogged air filter. Carburetor problems.	Contact an authorized service workshop.
- Ignition system	Wrong spark plug type. Buildup on electrodes. Short circuit. Faulty ignition unit.	Replace the spark plug. Check electrode gap and clean or replace spark plug. Contact an authorized service workshop.

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Problem	Possible solutions
Belt coming off.	1. Pulleys not aligned. 2. Belt tension is insufficient. Adjust belt tension.
Belt engages late or slips.	1. Tighten the belt as described in the operator's manual. 2. Reduce cutting depth.
Belt not staying tight after adjustment.	1. Check for damage on the axle, pulley or key. Make sure that the setscrews are properly tightened. 2. Replace damaged parts.
The cutting wheel does not rotate.	1. Engine speed is insufficient to activate the centrifugal clutch. Make sure the throttle cable is working properly. 2. Belt tension is insufficient. Adjust belt tension. 3. Clutch is worn - replace shoes and springs, and/or clutch bearings.
The cutting wheel continues to rotate.	1. Check that the throttle is disconnected. 2. Check for damage on the throttle cable. 3. Check that the throttle cable is properly mounted on the throttle valve. 4. The engine speed is not under 1000 rpm, which is required to disengage the centrifugal clutch. 5. Inspect springs on clutch shoes. If tension on clutch shoes is not enough to pull shoes back, replace springs and clutch shoes.
The parking brake is slipping.	1. Adjust the brake tension in the manner described in the operator's manual. 2. Check for damage on the brake rod or lever. 3. Check for wear on the brake pads. Replace as necessary.

STORAGE & TECHNICAL DATA

Winter storage

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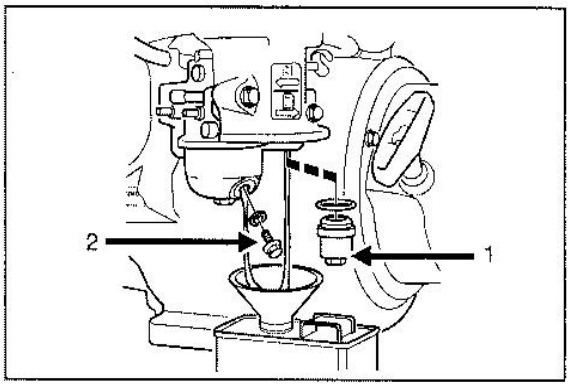
At the end of the season, the machine should be readied for storage (or if it will not be in use for longer than 30 days). Fuel allowed to stand for long periods of time (30 days or more) can leave sticky residues that can plug the carburetor and disrupt engine function. Fuel stabilizers are an acceptable option to guard against sticky residue build up during storage.



If alkylate gasoline (Aspen) is used, stabilizers are unnecessary because this fuel is stable. However, you should avoid switching between regular and alkylate gasoline as sensitive rubber components can harden. Add stabilizer to the fuel in the tank or in the storage container.

Always use the mixing ratios specified by the manufacturer of the stabilizer. Run the engine for at least 10 minutes after add in the stabilizer so that it reaches the carburetor. DO NOT empty the fuel tank and the carburetor if you have added stabilizer.

⚠ WARNING

NEVER store an engine with fuel in the tank indoors or in poorly ventilated spaces where fuel vapor can come in contact with open flame, sparks or a pilot light such as in a boiler, hot water tank, clothing drier, etc. Handle the fuel with caution. It is very flammable and careless use can cause serious damage to person and property. Drain the fuel into an approved container outdoors and far away from open flame. NEVER use gasoline for cleaning. Use a de-greaser and warm water instead.

Service

When ordering spare parts, please specify the purchase year, model, type, and serial number. Always use genuine Praxis parts.

An annual check-up at an authorized service workshop is a good way to ensure that your machine performs its best the following season.

To ready the machine for storage, follow these steps:

1. Clean the machine carefully, particularly the chasses and working equipment. Touch up damage to the paint to prevent rust.
2. Inspect the machine for worn or damaged parts and tighten any nuts or screws that may have become loose.
3. Change the engine oil; dispose of properly.
4. Open the fuel valve. Empty the fuel tank (1) and the carburetor (2).

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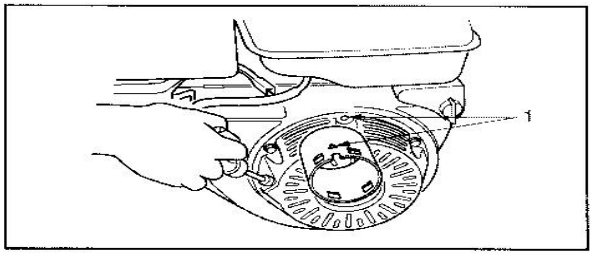
5. Close the fuel valve.

6. Remove the spark plug and pour about a tablespoon of engine oil in the cylinder. Turn over the engine so that the oil is evenly distributed and then refit the spark plug. Put the engine in the compression phase where the triangle mark on the sleeve of the starter is aligned with the upper hole in the starter. Note: Compression phase occurs every second revolution



7. Lubricate all grease nipples, joints and cables as described in the chapter "Lubrication/Lubrication schedule".

8. Store the machine in a clean, dry place and cover it for extra protection.

9. Cover the blade and cutters with a thin coat of oil to avoid rust.

SPECIFICATIONS:

Model	**PRX90**	**PRX130**
Engine	Honda GX270QXC9	Honda GX390QXC9
Power	9 hp	13 hp
Idling speed	1250-1550 RPM	1250-1550 RPM
Spark plug	NK BPR6ES DENSO W20EPR-U	NK BPR6ES DENSO W20EPR-U
Fuel tank volume	6 liters/1.60 US Gal	6.5 liters/1.72 US Gal
Tires	4.10 - 4 (pneumatic)	13 x 5.00 - 6 (pneumatic)
Brake	Disk - Lever activated	Disk - Lever activated
Drive	Direct	Direct
Belt	3V	3V
Clutch	Centrifugal clutch	Centrifugal clutch
Cutters	12 cutters with tungsten carbide tips	12 cutters with tungsten carbide tips
Cutting depth	Approx 12" (30.48 cm)	Approx 12" (30.48 cm)
Length	71 (180 cm)	76" (193 cm)
Width	26.5 (67cm)	29.5 (75 cm)
Height	40" (102 cm)	42" (107 cm)
Weight	200 lbs. (90 kg)	240 lbs. (109 kg)

Service Journal:

Action	**Date, stamp, signature**

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Delivery service 1. Break the packaging and make sure the machine has not been damaged in transport. 2. Where applicable, assembly accompanying components. 3. Check that the machine design corresponds to the customer order. 4. Check that the right amount of oil is in the engine and transmission. 5. Check and adjust air pressure in the tires. (25 psi max.) 6. Check that the working equipment is properly set. 8. Check that the drive pulleys and sprockets are aligned. 9. Lubricate the machine as described in the lubrication schedule. 10. Fill the fuel tank and start the engine. 11. Check that the machine and working equipment do not move in neutral. 12. Check that all operating instruments. 13. Check decals and information attached to the unit. 14. Check the engine speed (RPM), see Technical Data. 15. Check for leakage. 16. Inform the customer about: The need and advantages of following the service schedule. The need and advantages of leaving the machine for service Every 300 hours. The effects of service and maintaining a service journal on the Machine's resale value. 17. Fill in the sales papers, etc.	
After the first 20 hours 1. Change the engine oil. 2. Change oil in reduction gear, where applicable. 3. Check that belts and chains are properly adjusted. 4. Tighten screws and nuts.	

Service Journal (Continued):

Action	Date, stamp, signature

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PARTS LIST

PRX90 & PRX130

Chassis and Engine Assembly

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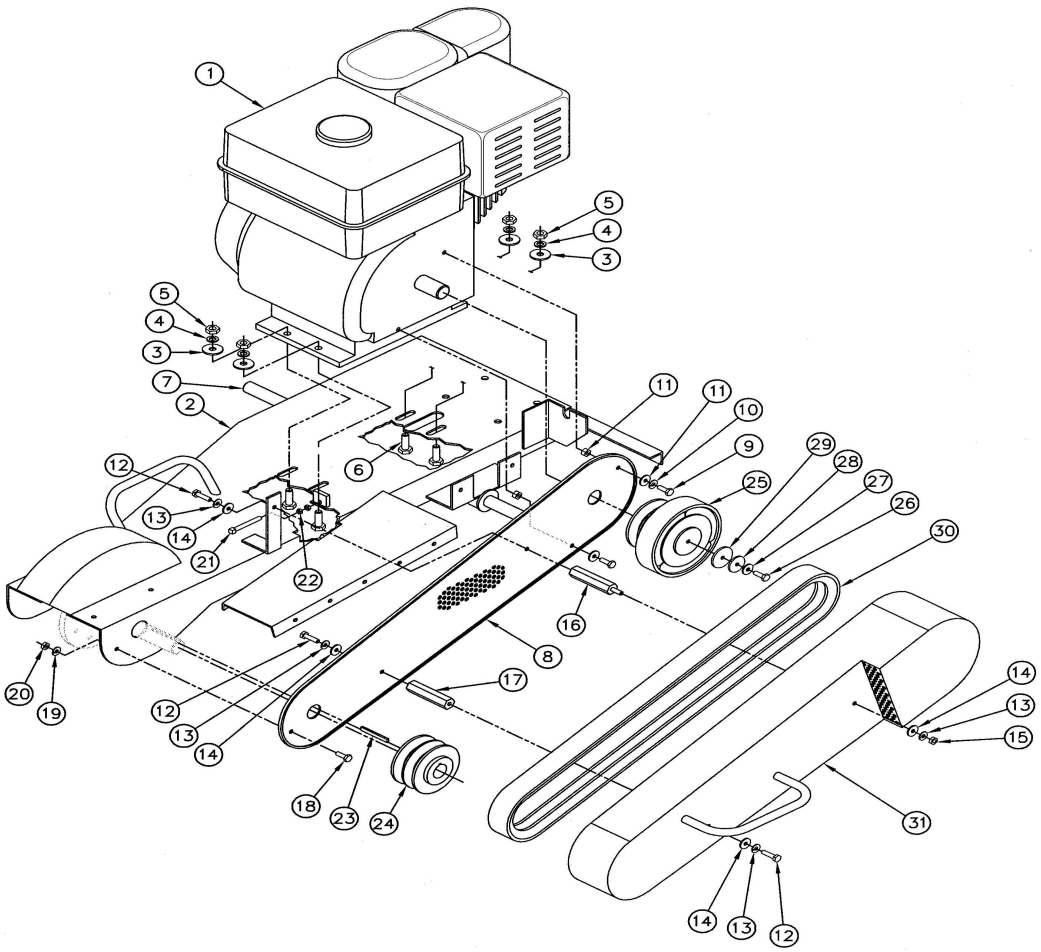

CHASSE AND ENGINE ASSEMBLY

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Ref No.	Part No.	Description	QTY	
1	GX 270QXC	Honda 9hp Cyclone with Muffler Cap	1	
1	GX 390QXC	Honda 13hp Cyclone with Muffler Cap	1	
2	FC 450-9	Frame 9hp	1	
2	FC 450-13	Frame 13hp	1	
3	96005	5/16 Flat Washer	4	
4	33893	3/8 Lock Washer	4	
5	95813	3/8-16 Nut	4	
6	21819	Carriage Bolt 3/8-16 x 1 1/2	4	
7	FC 451-9	Axle 9hp	1	
7	FC 451-13	Axle 13hp	1	
8	FC 452	Inner Belt Guard	1	
9	17055	5/16-24 x 1 Bolt	2	
10	33620	5/16 Lock Washer	2	
11	96005	5/16 Flat Washer	8	
12	95105	3/8-16 x 1 Bolt	1	
13	33893	3/8 Lock Washer	1	
14	96005	5/16 Flat Washer	1	
15	95813	3/8-16 Nut	1	
16	37820-A	Spacer	1	
17	37820-B	Spacer	1	
18	95053	5/16-18 x 3/4 Bolt	1	
19	33620	5/16 Lock Washer	1	
20	95812	5/16-18 Nut	1	
21	26076	Square 3/8-16 x 3 Bolt	1	
22	95813	3/8-16 Nut	2	
23	3002500250-1750	1/4 Key	1	
24	VRVC201	3V Sheave with Bushing	1	
24	VC 304	Front Shaft Pulley (Prior to 2004)	1	
25	VRVC200	3V Clutch	1	
25	VC 301	Clutch (Prior to 2004)	1	
26	17159	7/16-20 x 1 1/2 Bolt	1	
27	33894	7/16 Lock Washer	1	
28	96006	3/8 Flat Washer	1	
29	33860	7/16 USS Flat Washer	1	
30	VRVC203	3V Banded Belt	1	
30	VC 305	Banded Belt (Prior to 2004)	1	
31	FC 453	Outer Belt Guard	1	

PRX90 & PRX130
Handle Assembly

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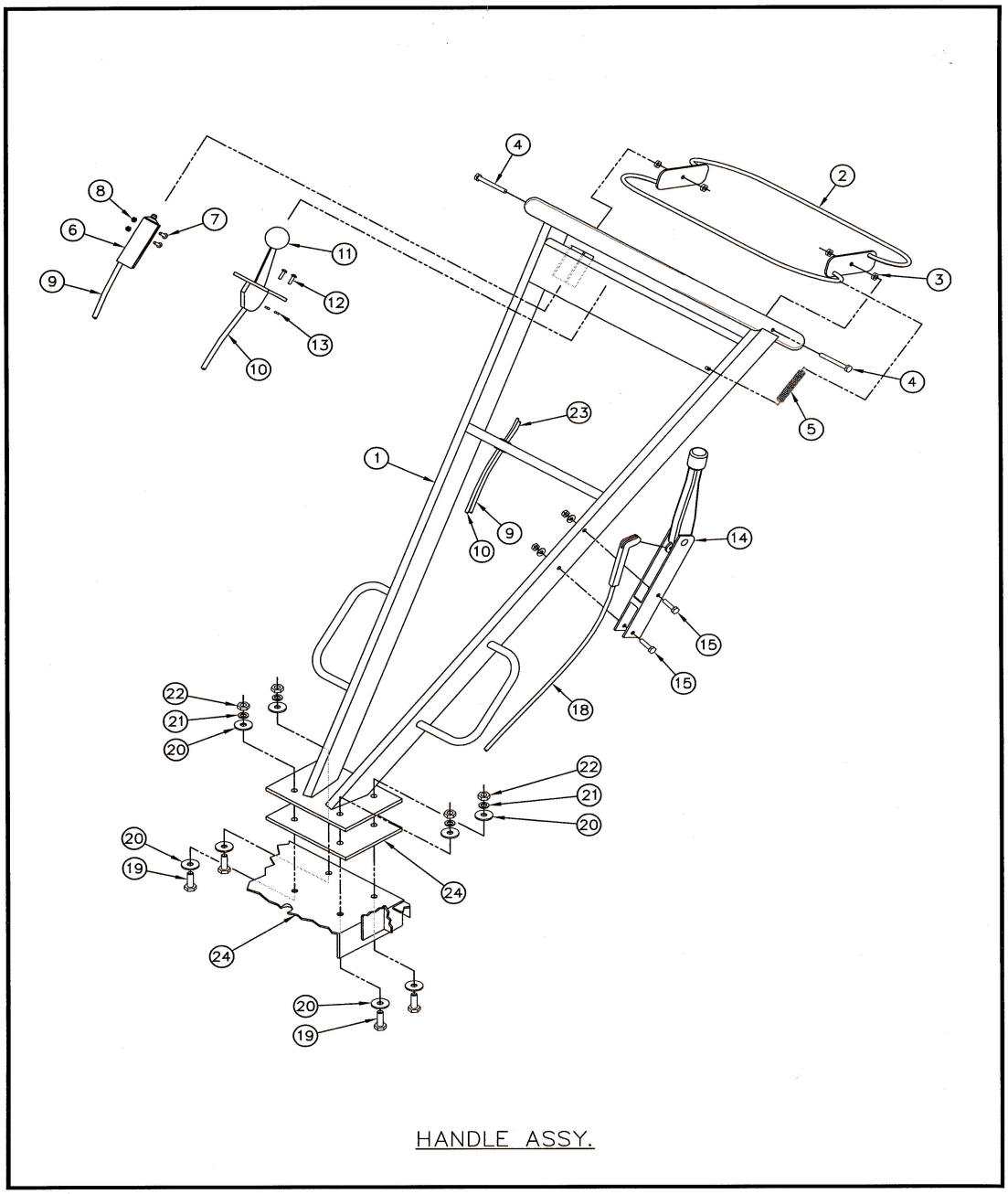

HANDLE ASSEMBLY

MODELS PRX90 & PRX130

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Ref No.	Part No.	Description	QTY	
1	FC 349	Operator Handle	1	
2	FC 350	Operator Presence Safety Handle	1	
3	90040	5/16-18 Lock Nut	4	
4	95063	5/16-18 x 2 1/2 Bolt	2	
5	VC 350	Stainless Steel Return Spring	1	
6	VC 351	Sealed Plunger	1	
7	28957	10-24 x 1/2 Screw	2	
8	37014	Nylock 10-24	2	
9	VC 352	Electrical Wiring	1	
10	VC 306	Throttle Cable with Knob	1	
11	VC 306	Throttle Cable with Knob	1	
12	28794	6-32 x 3/8 Screw	2	
13	37010	Nylock 6-32	2	
14	VC 307	Brake Lever	1	
15	95063	5/16-18 x 2 1/2 Bolt	2	
16	33620	5/16 Lock Washer	2	
17	95812	5/16-18 Nut	2	
18	VC 308	Brake Cable	1	
19	95159	7/16-14 x 1 1/2 Bolt	4	
20	96006	3/8 Flat Washer	8	
21	33894	7/16 Lock Washer	4	
22	95814	7/16-14 Nut	4	
23	9600	Rubber Grommet	2	
24	FC 348	Operator Handle Gasket	1	

PRX90 & PRX130
Blade and Shaft Assembly

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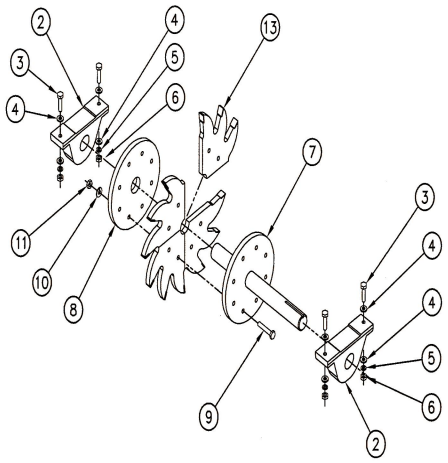

BLADE AND SHAFT ASSY.

BLADE AND SHAFT ASSEMBLY

MODELS PRX90 & PRX130

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Ref No.	Part No.	Description	QTY	
1	FC 302	Complete Shaft Assembly (Shaft, Flanges, Bearings)	1	
2	VC 302	Pillow Block Bearings - each	2	
3	18838	3/8-24 x 1 1/2 Bolt	4	
4	98025	3/8 Thick Washer	8	
5	33893	3/8 Lock Washer	4	
6	36456	3/8-24 Nut	4	
7	FC 302-A	Shaft with Key	1	
8	FC 302-B	Shaft Flange	1	
9	15109	3/8-16 x 1 1/2 Bolt	8	
10	33893	3/8 Lock Washer	8	
11	95813	3/8-16 Nut	8	
12	VC 300	Complete Set of Fasteners Blade (8 Bolts, Locks, Nuts)	1	
13	PRX 1000	Stump Grinding Quadrublade	1	
	PRX 2000	Trencher Grinding Quadrublade	1	
	PRX 250	1/4 section Stump Grinding Quadrublade	1	
	PRX 500	1/4 section Trencher Grinding Quadrublade	1	
	PRX4000	Six-Pack Tote of Grinding Quadrublades	1	

PRX90 & PRX130
Brake and Wheel Assembly

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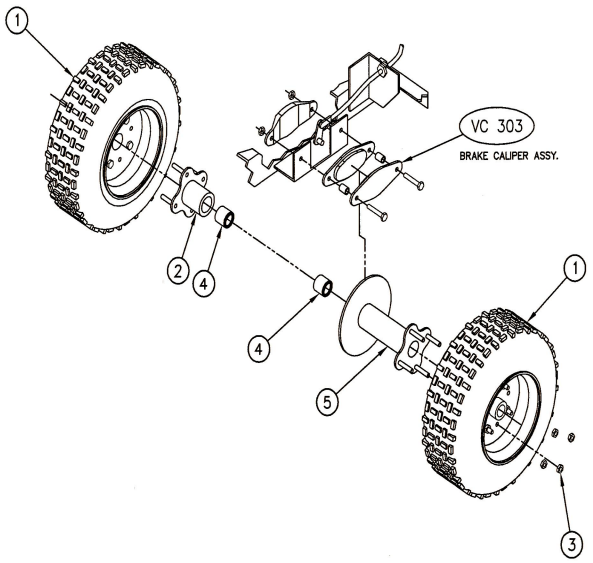

BRAKE AND WHEEL ASSY.

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BRAKE AND WHEEL ASSEMBLY

MODELS PRX90 & PRX130

Ref No.	Part No.	Description	QTY	
1	VC 325-9	Tire without Hub 9hp	2	
1	VC 325-13	Tire without Hub 13hp	2	
2	VC 325H-9	Tire Complete with Hub 9hp	1	
2	VC 325H-13	Tire Complete with Hub 13hp	1	
3	VC 325B-9	Tire Complete with Brake Hub 9hp	1	
3	VC 325B-13	Tire Complete with Brake Hub 13hp	1	
4	VC 396	Wheel Bearing	4	
5	VC 383	Set Collar	2	
6	VC 395	Hub	1	
7	VC 397	Hub with Brake Disk	1	

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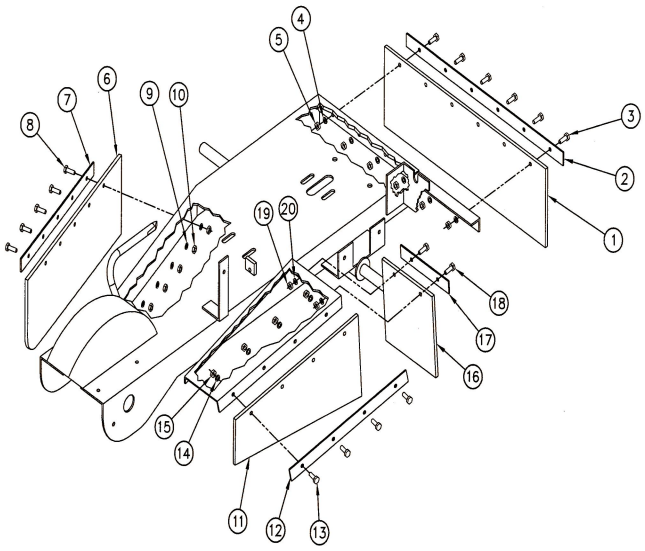

CHASSIS AND FLAP ASSY.

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CHASSE AND FLAP ASSEMBLY

MODELS PRX90 & PRX130

Ref No.	Part No.	Description	QTY	
1	FC 318A-9	Rear Flap 9hp	1	
1	FC 318A-13	Rear Flap 13hp	1	
2	FC 318B-9	Rear Flap Support 9hp	1	
2	FC 318B-13	Rear Flap Support 13hp	1	
3	95055	5/16-18 x 1 Bolt	6	
4	33620	5/16 Lock Washer	6	
5	95812	5/16-18 Nut	6	
6	FC 319-A	Right Side Flap	1	
7	FC 319-B	Right Side Flap Support	1	
8	95055	5/16-18 x 1 Bolt	5	
9	33620	5/16 Lock Washer	5	
10	95812	5/16-18 Nut	5	
11	FC 320-A	Left Side Flap	1	
12	FC 320-B	Left Side Flap Support	1	
13	95053	5/16-18 x 3/4 Bolt	4	
14	33620	5/16 Lock Washer	4	
15	95812	5/16-18 Nut	4	
16	FC 321A-9	Small Flap 9hp	1	
16	FC 321A-13	Small Flap 13hp	1	
17	FC 321B-9	Small Flap Support 9hp	1	
17	FC 321B-13	Small Flap Support 13hp	1	
18	95053	5/16-18 x 3/4 Bolt	2	
19	33620	5/16 Lock Washer	2	
20	95812	5/16-18 Nut	2	

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